

1       1. A method of treating a wart in a subject, the method comprising  
2       identifying a subject having or suspected of having a wart; and  
3       administering to the subject a composition comprising a fusion protein comprising  
4       (1) a heat shock protein (hsp) or an immunostimulatory fragment thereof, and (2) a protein of  
5       a human papilloma virus (HPV), or an antigenic fragment thereof, wherein the composition  
6       is administered in an amount sufficient to treat the wart.

1       2. The method of claim 1, wherein the hsp is a mycobacterial hsp.

1       3. The method of claim 2, wherein the mycobacterial hsp is a *Mycobacterium bovis* hsp.

1       4. The method of claim 3, wherein the hsp is *Mycobacterium bovis* Hsp65.

1       5. The method of claim 1, wherein the hsp is a member of the Hsp60 or Hsp70  
2       family of proteins.

1       6. The method of claim 1, wherein the HPV is a type 16 HPV.

1       7. The method of claim 1, wherein the protein of the HPV is an E7 protein.

1       8. The method of claim 1, wherein the composition contains about 50 to 5000 µg of  
2       the fusion protein.

1       9. The method of claim 8, wherein the composition contains about 100 to 2000 µg of  
2       the fusion protein.

1       10. The method of claim 1, wherein the composition is administered free of adjuvant.

1       11. The method of claim 1, wherein the subject is a mammal.

1        12. The method of claim 11, wherein the mammal is a human.

1        13. The method of claim 1, wherein the fusion protein is administered in an amount  
2        sufficient to reduce the size of the wart.

1        14. A method of treating, in a subject, a disease or condition associated with a human  
2        papilloma virus (HPV), the method comprising  
3                administering to the subject a composition comprising a fusion protein comprising  
4                (1) an hsp, or an immunostimulatory fragment thereof, and (2) a protein of an HPV, or an  
5                antigenic fragment thereof, wherein the subject is infected with an HPV type that is different  
6                from the HPV type administered to the subject, the composition being administered in an  
7                amount sufficient to treat the disease or condition.

1        15. The method of claim 14, wherein the hsp is a mycobacterial hsp.

1        16. The method of claim 15, wherein the mycobacterial hsp is a *Mycobacterium*  
2        *bovis* hsp.

1        17. The method of claim 16, wherein the hsp is *Mycobacterium bovis* Hsp65.

1        18. The method of claim 14, wherein the hsp is a member of the Hsp60 or Hsp70  
2        family of proteins.

1        19. The method of claim 14, wherein the HPV type administered to the subject is  
2        type 16.

1        20. The method of claim 19, wherein the subject has a disease or condition  
2        associated with an HPV of type 5, 6, 11, 18, 31, 33, 35, 45, 54, 60, or 70.

1        21. The method of claim 20, wherein the subject has a disease or condition  
2        associated with an HPV of type 6, 11, 33, 45, or 70.

1           22. The method of claim 21, wherein the subject has a disease or condition  
2       associated with an HPV of type 6 or 11.

1           23. The method of claim 14, wherein the protein of the HPV is an E7 protein.

1           24. The method of claim 14, wherein the composition contains about 50 to 5000 µg  
2       of the fusion protein.

1           25. The method of claim 24, wherein the composition contains about 100 to 2000 µg  
2       of the fusion protein.

1           26. The method of claim 14, wherein the composition is free of adjuvant.

1           27. The method of claim 14, wherein the subject is a mammal.

1           28. The method of claim 27, wherein the mammal is a human.

1           29. The method of claim 14, wherein the subject is not identified as being infected  
2       with the type of HPV that is administered prior to administration of the composition.

1           30. A method of treating a wart in a subject, the method comprising  
2       identifying a subject having, or suspected of having, a wart;  
3       administering to the subject a nucleic acid encoding a fusion polypeptide comprising  
4       (1) an hsp, or an immunostimulatory fragment thereof, and (2) a protein of an HPV or an  
5       antigenic fragment thereof; and  
6       expressing the fusion polypeptide in the subject in an amount sufficient to treat the  
7       wart.

1           31. The method of claim 30, wherein the nucleic acid is contained within a viral  
2       vector.

1       32. A method of treating, in a subject, a disease or condition associated with an HPV  
2 infection, the method comprising:

3           administering to the subject a nucleic acid encoding a fusion protein comprising  
4 (1) an hsp, or an immunostimulatory fragment thereof, and (2) a protein of an HPV, wherein  
5 the subject is infected with an HPV type that is different from the HPV type administered to  
6 the subject; and

7           expressing the fusion protein in the subject in an amount sufficient to treat the disease  
8 or condition.

1       33. The method of claim 32, wherein the nucleic acid is contained within a viral  
2 vector.

1       34. The method of claim 14, wherein the disease or condition is anogenital warts,  
2 plantars warts, cervical cancer, cervical dysplasia, anal cancer, anal dysplasia, or recurrent  
3 respiratory papillomatosis.

1       35. The method of claim 32, wherein the disease or condition is anogenital warts,  
2 plantars warts, cervical cancer, cervical dysplasia, anal cancer, anal dysplasia, or recurrent  
3 respiratory papillomatosis.